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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

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Applicant(s): Hernandez
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Art Unit: 1772
Examiner: William P. Watkins III
Title: GLASS FORMING TUBE AND GLASS CAKE AND METHOD INCORPORATING SAME

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APPEAL BRIEF UNDER 37 CFR § 41.37

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" filed April 10, 2006.

1. *Real Party in Interest.*

The real party in interest in this appeal is Sonoco Development, Inc., the assignee of the above-referenced patent application.

2. *Related Appeals and Interferences.*

There are no related appeals and/or interferences involving this application or its subject matter.

3. *Status of Claims.*

Claims 1-4 and 6-16 have been canceled, leaving only Claim 5 still pending. Claim 5 stands rejected.

4. ***Status of Amendments.***

All amendments have been entered.

5. ***Summary of Claimed Subject Matter.***

The invention of Claim 5 is a forming tube upon which newly formed and coated glass fiber is wound to form a cake that is subsequently heated in an oven to cure and dry the liquid coating composition applied to the newly formed glass fiber (see overview of the glass forming, winding, and curing process in Figure 1, and p. 3, lines 16-27 through p. 4, lines 1-7).

Claim 5 is directed to a glass forming tube **32** comprising a plurality of paperboard plies **34, 36** spirally wound one upon another about an axis of the forming tube and adhered together to form a tubular body wall. The forming tube is constructed so that the tubular body wall is impervious to the liquid coating composition applied to the glass fiber, but is pervious to the vapors generated during curing of the coating composition (p. 4, lines 8-11, and Figure 3). Without such vapor permeability of the forming tube, the vapor pressure generated at the outer surface of the forming tube can build up to a level that can implode the tube. Furthermore, the curing process is significantly slowed by the inability of the vapor to pass through the tube wall. Prior-art forming tubes made from paperboard have had an outer silicone coating to render the tubes impervious to liquid, but the silicone does not allow the vapors to penetrate, thus leading to the aforementioned problems (p. 2, lines 1-9).

The forming tube of Claim 5 is constructed from paperboard plies that are free of silicone coating, thus overcoming the problems associated with the silicone coating. In accordance with the claimed invention, at least an outermost one of the plies (see ply **36** in Figure 4) comprises paperboard treated with a sizing compound so as to render the paperboard substantially impervious to liquid coating composition applied to the glass fiber but pervious to vapors generated during curing and drying of a cake of glass fiber (p. 4, lines 15-28).

6. ***Grounds of Rejection to be Reviewed on Appeal.***

Claim 5 was rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,026,690 to McClellan in view of U.S. Patent No. 5,710,853 to Von Hoessle et al. and U.S. Patent No. 6,165,321 to Pauley et al.

7. ***Argument.***

The Office Action rejected Claim 5 on the grounds that it would have been obvious to combine McClellan, Von Hoessle et al., and Pauley et al. In particular, the Office Action asserted that Von Hoessle et al. provides a motivation to make a forming tube that is pervious to vapors, that McClellan teaches the use of paperboard for making a forming tube, and that Pauley et al. teaches the use of a size for paperboard to prevent passage of liquid water while allowing water vapor to pass through. Thus, according to the Office Action, a person of ordinary skill in the art would have been led to make McClellan's forming tube from paperboard that has size as taught by Pauley et al., so as to achieve vapor permeability as Von Hoessle et al. allegedly teaches is desirable for a glass forming tube.

With respect to the motivation to combine, Applicant disagrees that Von Hoessle et al. and Pauley et al. would have suggested modifying McClellan to make the forming tube from sized paperboard. A person of ordinary skill in the art would not have been led to make a forming tube from sized paperboard because the person would have known from McClellan that a paperboard forming tube requires a silicon release coating, which is known to be impervious to liquid (see specification at p. 2, lines 1-4). Thus, the person would not have chosen to make a forming tube from sized paperboard to achieve liquid-resistance as taught by Pauley et al., because liquid-resistance is already provided by the required silicone release coating that McClellan teaches is necessary (col. 5, lines 36-39).

Furthermore, Applicant respectfully submits the rejection is erroneous because even if a person of ordinary skill had been led to combine the references, the resulting forming tube would not correspond to the forming tube defined by Claim 5. In particular, McClellan teaches that his paperboard forming tube requires an outer silicone release coating to facilitate release of the glass fiber from the outer surface of the tube (col. 5, lines 36-39). Even if the references were combined, therefore, the resulting sized paperboard forming tube would include a silicone release coating as taught by McClellan. In contrast, Claim 5 recites that the paperboard plies making up the forming tube are free of silicone release coating.

The Office Action asserts that it would have been obvious to omit the silicone release coating disclosed in McClellan. The Office Action apparently reasons that there would be motivation to omit McClellan's silicone release coating because Von Hoessle et al. unwinds the glass fiber from the exterior of the tube and thus does not require a release coating.

This is incorrect. Whether the glass fibers are unwound from the exterior of the tube as in Von Hoessle et al., or the tube is removed from the glass cake and the fibers are unwound from the inside of the cake as in McClellan, in either case the fibers must be detached from the exterior surface of the tube. McClellan teaches that a release coating is needed on his paperboard forming tube to allow ready detachment of the fibers. Von Hoessle et al. may be able to get away without including a release coating, but Von Hoessle's tube is not paperboard—it is ceramic (col. 4, lines 49-54).

For a paperboard tube, McClellan clearly teaches the need for a silicone release coating. Omitting such a release coating from a paperboard tube is not taught or suggested by the references.

To summarize, a person of ordinary skill in the art, knowing that a silicone release coating is necessary for a paperboard forming tube (as taught by McClellan), and further knowing that a silicone coating renders the tube impervious to liquid (see specification at p. 2, lines 1-4), would not have chosen to make a forming tube from sized paperboard because the required silicone release coating already renders the tube liquid-resistant. Furthermore, the person would not have omitted the silicone release coating because that would go directly against the teaching of McClellan.

Accordingly, Claim 5 is submitted to be patentable.

8. *Claims Appendix.*

An appendix containing a copy of the claims involved in the appeal is attached at page 6.

9. ***Evidence Appendix.***

N/A

10. ***Related Proceedings Appendix.***

N/A

CONCLUSION

Based on the foregoing remarks, Applicant respectively submits that the rejection of Claim 5 is improper and should be reversed.

Respectfully submitted,

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APPENDIX – CLAIMS ON APPEAL

1-4. (Canceled)

5. (Rejected) A glass forming tube about which newly formed and coated glass fiber is wound to form a cake of glass fiber, the forming tube comprising:

a plurality of paperboard plies spirally wound one upon another about an axis of the forming tube and adhered together to form a tubular body wall, the paperboard plies being free of silicone coating, wherein at least an outermost one of the plies comprises paperboard treated with a sizing compound so as to render the paperboard substantially impervious to liquid coating composition applied to the glass fiber but pervious to vapors generated during curing and drying of a cake of glass fiber.

6-16. (Canceled)